



9.4.5 PROCESS VENTS



The purpose of this portion of the Phase I Technical Review is to ensure that air emissions from process vents are controlled at new and existing hazardous waste treatment storage and disposal facilities (TSDFs). The requirement can be found in Title 22, California Code of Regulations Division 4.5, Chapter 14, Article 27, Sections 66264.1030 through 66264.1036: Air Emissions Standards for Process Vents, better known and referred to hereafter as "Subpart AA" (federal regulations). The requirements were developed for the protection of public health and to control emissions from restricted land-disposal treatment technologies.

Subpart AA and the parallel State regulations in Title 22 limits organic emissions from process vents at TSDFs associated with distillation, fractionation, thin-film evaporation, solvent extraction, and air or steam stripping operations. TSDFs managing wastes that contain less than 10 parts per million by weight (ppmw) organics are exempt from Subpart AA. The emission limits, established under Subpart AA, require that the sum of all process vent emissions for the TSDF are below 3.0 lb/hr (1.4 kg/hr) and 3.1 ton/yr (2.8 Mg/yr).

Before the permit writer can begin to write the permit for process vent requirements, the permittee must provide detailed information regarding the process(es) involved and the implementation plan the facility plans to follow. If the permit writer needs help reviewing the information submitted by the facility or understanding the processes involved, additional assistance should be sought.

KEY QUESTIONS

Does the facility have an operation which falls under Subpart AA requirements (Title 22, CCR, Section 66264.1030)?

Does the facility have to reduce process vent emissions (Title 22, CCR, Section 66264.1032)?

If emission reductions are required, how does the facility plan to comply with the regulation?

Did the facility include a detailed process diagram which includes the location of each vent involved in the Part B Application? Is the vent identification number included?

Is an inventory included in the Part B Application that lists each vent identification number, associated hazardous waste management unit, physical description of the hazardous waste (gas/vapor, light, or heavy liquid), EPA hazardous waste number, and the maximum waste volume throughput for the unit(s)?

Is an inventory included in the Part B Application that lists all tank vents serving the following: affected unit operations (distillation receiver, bottoms receiver, surge control tanks, decant separator tanks, or hot wells); control devices (condensers, boilers, flares, and carbon absorbers); and process vents (uncondensed overhead vapors from a distillation operation)?

Is a detailed description of the control equipment and closed-vent system included (type of control device; manufacturer's name and model number; dimensions; capacity; and construction materials)? (Title 22, CCR, Section 66264.1035)

Does the facility's emission reduction plan meet the minimum 95 percent emission reduction requirements (Title 22, CCR, Section 66264.1033)?

If the facility is basing compliance on emission reductions, was the appropriate source test(s) used? Was the facility operating at the highest loading or capacity level? Were three test runs performed?

(Title 22, CCR, Section 66264.1034)

If emission reductions are based on engineering calculations, are the calculations correct? Is there enough information to support the calculations? Are the data used of sufficient quality to support a judgement? Are the calculations based on the facility operating at the highest load or capacity level? (Title 22, CCR, Section 66264.1034)

Does the Part B Application include a detailed inspection, and monitoring plan (Title 22, CCR, Section 66264.1033)?

Does the Part B Application include the recordkeeping and reporting procedures? Are there examples of the recordkeeping forms? (Title 22, CCR, Section 66264.1035)

If applicable, is a compliance schedule included in the Part B Application? (Title 22, CCR, Section 66270.24)

Are all of the required signed statements included in the Part B Application? (Title 22, CCR, Section 66264.1035)?

REQUIRED OUTPUTS

APPLICABLE REGULATIONS AND STATUTES

State Laws and Regulations:

Title 22, California Code of Regulation.

Sections

66260.11	References
66264.1	Purpose, Scope and Applicability
Article 27	Air Emissions for Process Vents
66264.1030 through 1036	
66270.50	Duration of Permit
66271.14	Issuance and Effective Date of Permit

Health and Safety Code

Section

25200

Federal Laws and Regulations:

Chapter 20 RCRA TSDF

40 CFR

Section 264.1

Part 60	Reference Methods 2, 2A, 2C, 2D
	Reference Methods 18, 21, 22

Other Laws and Regulations

POLICIES

DTSC Policies:

EPA Policies:

Other Policies:

INSTRUCTIONS TO APPLICANTS

Handouts to be Given to Applicants:

Examples to be Given to Applicants:

CEQA CONSIDERATIONS

PUBLIC PARTICIPATION CONSIDERATIONS

Emission Control from process vents can be a significant community issue particularly if past failures have caused community exposures.

LEGAL CONSIDERATIONS

INTERAGENCY AGREEMENTS & MOUs

COORDINATION WITH OTHERS

Other Cal/EPA Agencies:

Air Resources Board

Other DTSC Units:

Local Air Districts:

EPA:

Environmental/Legislative/Industry Groups:

Special Requests:

STEP-BY-STEP PROCEDURES

Regulated Hazardous Waste Management Units

The following hazardous waste management units must be identified by the applicant by permit unit number or recycling unit number, waste stream number, and vent number:

1. separation,
2. distillation,
3. fractionation,
4. thin-film evaporation,
5. solvent extraction,
6. air stripping,
7. steam stripping, and
8. waste streams.

Sample Collection

Organic samples must be collected at a point before the waste is exposed to the atmosphere, such as an enclosed pipe or other closed system used to transfer the waste after it is generated onsite. For waste generated offsite, the samples must be collected at the inlet to the first waste management unit that receives the waste. The waste must be transferred to the facility in a closed system and may not be diluted or mixed with other waste. (Title 22, CCR, Section 66264.1034(d))

Performance Standards

The hourly process emissions from vents may be no more than 3 pounds per hour. To calculate the total process related emissions the applicant must use Reference Method 2 and 18. A test plan must be prepared and submitted by the applicant to DTSC. The owner/operator must sign a statement certifying the test conditions represent the actual worst case operating conditions of the facility. (Title 22, CCR, Section 66264.1031)

The following calculations must be checked by the permit writer: flow rate, organic concentration, and the average molecular weight of the waste. Also, check the emissions estimates. The data needed includes: hourly rate and number of hours of operation. Make sure to calculate the yearly emissions, which can be no greater than 3.1 tons per year.

EMISSION REDUCTION METHODS

Three emission reduction methods may be used to comply with the Subpart AA which are as follows:

1. The installation of control devices to reduce the process emissions below 3 pounds per hour and 3.1 tons per year.
2. The implementation of process changes or hours of operation to reduce emissions below 3 pounds per hour and 3.1 tons per year.
3. Achieving 95 percent reduction in vented process emissions by installing control device(s). (Title 22, CCR, Section 66264.1032)

Each one of the process vents covered must be listed in a table with the associated control device, and associated process unit. For those facilities that do not have control devices installed, the applicant must include an installation plan and the projected date for installation (compliance with the requirements must be within 18 months). (Title 22, CCR, Section 66264.1033)

EXAMPLE LIST OF FACILITY VENTS AND CONTROL DEVICES

<u>VENT #</u>	<u>CONTROL DEVICE</u>	<u>CONTROL DEVICE #</u>	<u>UNIT #</u>
___	Condenser	_____	___
___	Adsorber (regenerative)	_____	___
___	Adsorber (non-regen.)	_____	___
___	Process Heater	_____	___
___	Boiler	_____	___
___	Catalytic Vapor	_____	___
___	Incinerator	_____	___
___	Thermal Vapor	_____	___
___	Incinerator	_____	___
___	Air Assisted Flare	_____	___
___	Steam Assisted Flare	_____	___
___	Nonassisted Flare	_____	___

CONTROL EQUIPMENT REQUIREMENTS

CONDENSERS - must reduce emissions 95 percent by weight. The total emissions for the facility must be less than 3 pounds per hour and 3.1 tons per year.

All condensers must be monitored using a flow indicator that records hourly emissions, installed as close as possible to the inlet but before the waste streams are combined, and inspected daily (Title 22, CCR, Section 66264.1033(f)). The applicant also has to choose one of the following monitoring methods:

1. Continuously record the organic compound concentration in the exhaust vent stream, and inspect it daily; or
2. Install a temperature monitoring device which continuously records the temperature at two locations (the exhaust vent stream from the condenser and the coolant fluid exiting the condenser). The accuracy of the temperature monitoring device must be +/- 1 percent of the temperature being monitored or 0.5 degrees C (whichever is greater) (Title 22, CCR, Section 66264.1033(f)(2)(F)).

All repairs must be made immediately upon daily inspection (Title 22, CCR, Section 66264.1033(f)(3)).

Data demonstrating compliance must be submitted by the applicant to DTSC and a copy kept at the facility. The data must be based on source test data or engineering calculations.

Emission reductions based on test data - the applicant must submit a test plan which includes:

1. The system design flow rate,
2. The system design organic content,
3. The ranges of other parameters used,
4. The information on the highest capacity loading that and included a signed statement by the owner/operator,
5. The type of control device,
6. The manufacturer's name and model number,
7. The dimensions of the control device and capacity,
8. The construction materials, the description of the sampling and monitoring system (location, associated equipment, reading frequency, and analytical procedure), and
9. All performance test results.

Emission reduction based on engineering calculations

1. A list of all references and sources used;
2. The dates of closed-vent monitoring;
3. All design analysis, specifications, drawings, and piping design, (information provided by vendor is okay);

4. A list of condenser parameters (vent stream composition, constituent concentrations, flow rates, relative humidity, temperature, design outlet capacity level, design inlet and exit temperature); and
5. The owner/operator signed statements:
 - a. The parameters used were based on the maximum process rate, and
 - b. A control device is designed to operate at a 95 percent efficiency rate (unless the organic concentrations are below 10 ppmw or emissions are below 3 pounds per hour and 3.1 tons per year).

(Title 22, CCR, Section 66264.1032(c))

The following general device information must be provided to DTSC and kept on file by the applicant: the description and date of modification of the closed-vent system or control device, a description of the monitoring device, a diagram of the monitoring sensor location, and the date(s) of the device start-up and shutdown. (Title 22, CCR, Section 66264.1035)

Exceedances must be reported as follows:

1. If when monitoring the organic concentration in the exhaust, the organic concentration is greater than 20 percent above the design outlet.
2. If when monitoring temperature, the exhaust temperature is 6 degrees centigrade above the design average exhaust vent stream temperature, or the coolant fluid exiting the condenser is more than 6 degrees centigrade above the design average coolant fluid temperature at the condenser outlet. Include the corrective action taken when reporting exceedances. (Title 22, CCR, Section 66264.1035(c)(4))

Closed-vent systems must meet the no detectable emissions limit (500 ppm above background) and may have no visual emissions. Monitoring is required on the effective date, annually, and at the request of DTSC. Leaks must be repaired as soon as possible but within 15 days after the leak is detected. (Title 22, CCR, Section 66264.1033(k) & (l))

CATALYTIC VAPOR INCINERATION - must meet one of three efficiency determinations:

1. Greater than or equal to 95 percent emission reduction;
2. Total organic concentration is equal to 20 ppmw, based on the sum of compounds, (dry basis at 3 percent O₂); or
3. The retention time is equal to 0.5 seconds at a temperature greater than or equal to 760 degrees C.

All catalytic vapor incinerators must be monitored using a flow indicator that records hourly emissions, installed as close as possible to the inlet, but before the waste streams are combined, and inspected daily. (Title 22, CCR, Section 66264.1033(f)) One of the following monitoring methods must be chosen:

1. Continuously record the organic compound concentration in the exhaust vent stream, and inspect it daily; or
2. Install a temperature monitoring device which continuously records the temperature at the inlet and the outlet of the control device. The accuracy of the temperature monitoring device must be +/- 1 percent of the temperature being monitored or 0.5 degrees C (whichever is greater) (Title 22, CCR, Section 66264.1033(f)(2)(A)).

All repairs must be made immediately upon daily inspection. (Title 22, CCR, Section 66264.1033(f)(3))

Data demonstrating compliance must be submitted by the applicant to DTSC and a copy kept at the facility. The data must be based on source test dates or engineering calculations.

Emission reductions based on test data - the applicant must submit a test plan which includes:

1. The system design flow rate,
2. The system design organic content,
3. The ranges of other parameters used,
4. The information on the highest capacity loading that and included a signed statement by the owner/operator,
5. The type of control device,
6. The manufacturers name and model number,
7. The dimensions of the control device and capacity,
8. The construction materials, the description of the sampling and monitoring system (location, associated equipment, reading frequency, and analytical procedure), and
9. All performance test results.

Emission reduction based on engineering calculations:

1. A list of all references and sources used;
2. The dates of closed-vent monitoring;
3. All design analysis, specifications, drawings, and piping design, (information provided by vendor is okay);
4. Analysis results from four grab samples, collected at the entry of the separation unit;
5. A list of incinerator parameters which include the vent stream composition, constituent concentration, flow rate, minimum design temperature across the catalytic bed inlet and outlet, and the average design temperature across the catalytic bed inlet and outlet.
6. The owner/operator signed statements
 - a. The parameters used were based on the maximum process rate, and
 - b. The control device is designed to operate at a 95 percent efficiency rate (unless the organic concentrations are below 10 ppmw or emissions are below 3 pounds per hour and 3.1 tons per year).

(Title 22, CCR, Section 66264.1032(c))

The following general device information must be provided to DTSC and kept on file by the applicant: the description and date of modification of the closed-vent system or control device, a description of the monitoring device, a diagram of the monitoring sensor location, and the date(s) of the device start-up and shutdown. (Title 22, CCR, 1035)

Exceedances must be reported as follows:

1. If the inlet temperature is greater than 28 degrees C below the design average combustion zone temperature, or
2. If the temperature difference across the catalytic bed is 80 percent of the design average temperature established as a requirement of subsection (b)(4)(C)(2). Include the corrective action taken when reporting the exceedances. (Title 22, CCR, Section 66264.1035(c)(4))
(Title 22, CCR, Section 66264.1035(c)(4))

Closed-vent systems must meet the no detectable emissions limit (500 ppm above background) and may have no visual emissions. Monitoring is required on the effective date, annually, and at the request of DTSC. Leaks must be repaired as soon as possible but within 15 days after the leak is detected. (Title 22, CCR, Section 66264.1033(k) & (l))

THERMAL VAPOR INCINERATOR - must meet one of three efficiency determinations:

1. Greater than or equal to 95 percent emission reduction;
2. Total organic concentration is equal to 20 ppmw, based on the sum of compounds, dry basis at 3 percent O₂; or
3. The retention time is equal to 0.5 seconds at greater than or equal to 760 degrees C.

All thermal vapor incinerators must be monitored using a flow indicator that records hourly emissions, installed as close as possible to the inlet but before the waste streams are combined, and inspected daily. (Title 22, CCR, Section 66264.1033(f)) The applicant also has to choose one of the following monitoring methods:

1. Continuously record the organic compound concentration in the exhaust vent stream, and inspect it daily; or
2. Install a temperature monitoring device which continuously records the temperature at the inlet and the outlet of the control device. The accuracy of the temperature monitoring device must be +/- 1 percent of the temperature being monitored or 0.5 degrees C (whichever is greater). (Title 22, CCR, Section 66264.1033(f)(2)(A))

All repairs must be made immediately upon daily inspection. (Title 22, CCR, Section 66264.1033(f)(3))

Data demonstrating compliance must be submitted by the applicant to DTSC and a copy kept at the facility. The data must be based on source test data or engineering calculations.

Emission reductions based on test data - the applicant must submit a test plan which includes:

1. The system design flow rate,
2. The system design organic content,
3. The ranges of other parameters used,
4. The information on the highest capacity loading that and included a signed statement by the owner/operator,
5. The type of control device,
6. The manufacturer's name and model number,
7. The dimensions of the control device and capacity,

8. The construction materials, the description of the sampling and monitoring system (location, associated equipment, reading frequency, and analytical procedure), and

9. All performance test results.

Emission reduction based on engineering calculations -

1. A list of all references and sources used;

2. The dates of closed-vent monitoring;

3. All design analysis, specifications, drawings, and piping design, (information provided by vendor is okay);

4. The incineration parameters (vent stream composition, constituent concentration, flow rate, minimum temperature in the combustion zone, average design temperature in the combustion zone, and the retention time in the combustion zone).

5. The owner/operator signed statements

a. parameters used were based on the maximum process rate, and

b. control device is designed to operate at a 95 percent efficiency rate (unless the organic concentrations is below 10 ppmw or emissions are below 3 pounds per hour and 3.1 tons per year).

(Title 22, CCR, 1032(c))

The following general device information must be provided to DTSC and kept on file by the applicant: the description and date of modification of the closed-vent system or control device, a description of the monitoring device, a diagram of the monitoring sensor location, and the date(s) of the device start-up and shutdown. (Title 22, CCR, 1035)

Exceedances must be reported as follows:

1. If the thermal incinerator is designed to operate with a minimum residence time of 0.5 seconds at a minimum temperature of 760 degrees C, report when the combustion temperature is below 760 degrees C;

2. If the thermal incinerator is designed to operate with an organic emission reduction efficiency of 95 ppmw or greater, report when the combustion zone temperature is more than 28 degrees C below the design average combustion zone temperature established as a requirement of subsection (b)(4)(C).

Include the corrective action taken when reporting exceedances. (Title 22, CCR, Section 66264.1035(c)(4))

Closed-vent systems must meet the no detectable emissions limit (500 ppm above background) and may have no visual emissions. Monitoring is required on the effective date, annually, and at the request of DTSC. Leaks must be repaired as soon as possible but in every case within 15 days after the leak is detected. (Title 22, CCR, Section 66264.1033(k) & (l))

BOILER/PROCESS HEATERS - must meet one of three efficiency determinations:

1. Greater than or equal to 95 percent emission reduction;

2. Total organic concentration is equal to 20 ppmw, based on the sum of compounds, dry basis at 3 percent O₂; or

3. The retention time is equal to 0.5 seconds at greater than or equal to 760 degrees C.

All boiler/process heaters must be monitored using a flow indicator that records hourly emissions, installed as close as possible to the inlet but before the waste streams are combined, and inspected daily. If the design heat input capacity is less than 44 MW. (Title 22, CCR, Section 66264.1033(f)) A temperature monitoring device which continuously records the temperature at the inlet and the outlet of the control device must be installed. The accuracy of the temperature monitoring device must be +/- 1 percent of the temperature being monitored or 0.5 degrees C (whichever is greater). If the design heat input capacity is equal to or greater than 44 MW, continuously record a parameter that indicates good combustion practices, and inspect daily. (Title 22, CCR, Section 66264.1033(f)(2)(D) & (E))

All repairs must be made immediately upon daily inspection. (Title 22, CCR, Section 66264.1033(f)(3))

Data demonstrating compliance must be submitted by the applicant to DTSC and a copy kept at the facility. The data must be based on source test data or engineering calculations.

Emission reductions based on test data - the applicant must submit a test plan which includes:

1. The system design flow rate,
2. The system design organic content,
3. The range of other parameters used,
4. The information on the highest capacity loading and included a signed statement by the owner/operator,
5. The type of control device,
6. The manufacturer's name and model number,
7. The dimensions of the control device and capacity,
8. The construction materials, the description of the sampling and monitoring system (location, associated equipment, reading frequency, and analytical procedure), and
9. All performance test results.

Emission reduction based on engineering calculations -

1. A list of all references and sources used;
2. The dates of closed-vent monitoring;
3. All design analysis, specifications, drawings, and piping design, (information provided by vendor is okay);
4. The boiler/process heater operating parameters (vent stream composition, constituent concentration, flow rate, minimum design flame zone temperature, average design temperature in the flame zone, and the retention time in the combustion zone).
5. A description of the method used and the location where the vent stream enters the combustion zone;
6. The owner/operator signed statements

- a. parameters used were based on the maximum process rate, and
- b. control device is designed to operate at a 95 percent efficiency rate (unless the organic concentrations is below 10 ppmw or emissions are below 3 pounds per hour and 3.1 tons per year).

(Title 22, CCR, Section 66264.1032(c))

The following general device information must be provided to DTSC and kept on file by the applicant: the description and date of modification of the closed-vent system or control device, a description of the monitoring device, a diagram of the monitoring sensor location, and the date(s) of the device start-up and shutdown. (Title 22, CCR, Section 66264.1035)

Exceedances must be reported as follows: if the flame zone is greater than 28 degrees C below the design average combustion zone temperature established as a requirement of subsection (b)(4)(C). Include the corrective action taken when reporting exceedances. (Title 22, CCR, Section 66264.1035(c)(4))

Closed-vent systems must meet the no detectable emissions limit (500 ppm above background) and may have no visual emissions. Monitoring is required on the effective date, annually, and at the request of DTSC. Leaks must be repaired as soon as possible but in every case within 15 days after the leak is detected. (Title 22, CCR, 1033(k) & (l))

FLARES - must have no visual emissions for more than five minutes during any consecutive hour, and the flame must be present at all times. Also, flares must meet the specific efficiency determinations for:

1. Steam-assisted,
2. Air-assisted, or
3. Non-assisted.

Refer to the regulation for the specific efficiency calculations. (Title 22, CCR, Section 66264.1033(d)(6))

All flares must be monitored using a flow indicator that records hourly emissions, installed as close as possible to the inlet but before the waste streams are combined, and inspected daily. Flares must also be equipped with a heat sensing device for continuous ignition of pilot flame and continuous ignition recorder. Inspection must be performed daily. (Title 22, CCR, Section 66264.1033(f)(2)(C))

All repairs must be made immediately upon daily inspection. (Title 22, CCR, Section 66264.1033(f)(3))

Data demonstrating compliance must be submitted by the applicant to DTSC and a copy kept at the facility. The data must be based on source test data or engineering calculations.

Emission reductions based on test data - the applicant must submit a test plan which includes:

1. The system design flow rate,
2. The system design organic content,
3. The range of other parameters used,
4. The information on the highest capacity loading and included a signed statement by the owner/operator,
5. The type of control device,

6. The manufacturers name and model number,
7. The dimensions of the control device and capacity,
8. The construction materials, the description of the sampling and monitoring system (location, associated equipment, reading frequency, and analytical procedure), and
9. All performance test results.

Emission reduction based on engineering calculations

1. A list of all references and sources used;
2. The dates of closed-vent monitoring;
3. All design analysis, specifications, drawings, and piping design, (information provided by vendor is okay);
4. The flare operating parameters (vent stream composition, constituent concentration, flow rate, no visible emissions, flame present, heat value, and velocity).
5. The owner/operator signed statements
 - a. parameters used were based on the maximum process rate, and
 - b. control device is designed to operate at a 95 percent efficiency rate (unless the organic concentrations is below 10 ppmw or emissions are below 3 pounds per hour and 3.1 tons per year).

(Title 22, CCR, Section 66264.1032(c))

The following general device information must be provided to DTSC and kept on file by the applicant: the description and date of modification of the closed-vent system or control device, a description of the monitoring device, a diagram of the monitoring sensor location, and the date(s) of the device start-up and shutdown. (Title 22, CCR, Section 66264.1035)

Exceedances must be reported as follows: periods when the flame is not ignited, cause of any exceedance, and the measures taken to correct the problem(s). (Section 6264.1035(c)(4))

Closed-vent systems must meet the no detectable emissions limit (500 ppm above background) and may have no visual emissions. Monitoring is required on the effective date, annually, and at the request of DTSC. Leaks must be repaired as soon as possible but within 15 days after the leak is detected. (Title 22, CCR, Section 66264.1033(k) & (l))

CARBON ADSORBER SYSTEM-REGENERATIVE - must reduce emissions 95 percent by weight. The total emissions for the facility must be less than 3 pounds per hour and 3.1 tons per year.

All carbon adsorbers (regenerative) must be monitored using a flow indicator that records hourly emissions, installed as close as possible to the inlet but before the waste streams are combined, and inspected daily. (Title 22, CCR, Section 66264.1033(f)) The applicant also has to choose one of the following monitoring methods:

1. Continuously record the organic compound concentration in the carbon bed exhaust stream, and inspect it daily; or
2. Install a device to measure a parameter that initiates regeneration on a regular, predetermined time cycle. The device must be equipped with a continuous recorder and inspected daily. or

3. Establish a predetermined time interval that is less than the service life of the carbon to replace it. (Title 22, CCR, Section 66264.1033(f)(2)(G) & 66.264.1033(g))

All repairs must be made immediately upon daily inspection. (Title 22, CCR, 1033(f)(3))

Data demonstrating compliance must be submitted by the applicant to DTSC and a copy kept at the facility. The data must be based on source test data or engineering calculations.

Emission reductions based on test data - the applicant must submit a test plan which includes:

1. The system design flow rate,
2. The system design organic content,
3. The range of other parameters used,
4. The information on the highest capacity loading and included a signed statement by the owner/operator,
5. The type of control device,
6. The manufacturer's name and model number,
7. The dimensions of the control device and capacity,
8. The construction materials, the description of the sampling and monitoring system (location, associated equipment, reading frequency, and analytical procedure), and
9. All performance test results.

Emission reduction based on engineering calculations

1. A list of all references and sources used;
2. The dates of closed-vent monitoring;
3. All design analysis, specifications, drawings, and piping design, (information provided by vendor is okay);
4. A list of adsorber parameters (vent stream composition, constituent concentrations, flow rates, relative humidity, temperature, design outlet capacity level, type and working capacity of activated carbon beds, total stream flow over carbon bed for each complete regenerative cycle, duration of carbon bed steaming and cooling/drying cycles, the design temperatures during and after regeneration, and the expected service life of the carbon); and
5. The owner/operator signed statements
 - a. parameters used were based on the maximum process rate, and
 - b. control device is designed to operate at a 95 percent efficiency rate (unless the organic concentrations is below 10 ppm or emissions are below 3 pounds per hour and 3.1 tons per year).

(Title 22, CCR, Section 66264.1032(c))

The following general device information must be provided to DTSC and kept on file by the applicant: the description and date of modification of the closed-vent system or control device, a description of the monitoring device, a diagram of the monitoring sensor location, and the date(s) of the device start-

up and shutdown. (Title 22, CCR, Section 66264.1035)

Exceedances must be reported as follows:

1. If monitoring the organic concentration in the exhaust, when the organic concentration is greater than 20 percent above the design outlet.
2. If the parameter for carbon regeneration based on flow passes the predetermined cycle.
3. Include the reason for the exceedance and what corrective measures were taken.
(Title 22, CCR, Section 66264.1035(c)(4))

Closed-vent systems must meet the no detectable emissions limit (500 ppm above background) and may have no visual emissions. Monitoring is required on the effective date, annually, and at the request of DTSC. Leaks must be repaired as soon as possible but within 15 days after the leak is detected. (Title 22, CCR, Section 66264.1033(k) & (l))

CARBON ADSORBER SYSTEM-NONREGENERATIVE - must reduce emissions 95 percent by weight. The total emissions for the facility must be less than 3 pounds per hour and 3.1 tons per year.

All carbon adsorbers (nonregenerative) must be monitored using a flow indicator that records hourly emissions, installed as close as possible to the inlet but before the waste streams are combined, and inspected daily (66264.1033(f)). The applicant must choose one of the following monitoring methods:

1. Monitor regularly the exhaust vent stream, inspect the carbon system daily or before 20 percent of the carbon life has been used (whichever is longer), and replace the carbon bed when necessary;
2. Install a device to measure a parameter that initiates regeneration on a regular, predetermined time cycle. The device must be equipped with a continuous recorder and inspected daily; or
3. Establish a predetermined time interval that is less than the service life of the carbon to replace it.
(Title 22, CCR, Section 66264.1033(g) and (h))

All repairs must be made immediately upon daily inspection. (Title 22, CCR, Section 665264.1033(f)(3))

Data demonstrating compliance must be submitted by the applicant to DTSC and a copy kept at the facility. The data must be based on source test data or engineering calculations.

Emission reductions based on test data - the applicant must submit a test plan which includes:

1. The system design flow rate,
2. The system design organic content,
3. The range of other parameters used,
4. The information on the highest capacity loading and included a signed statement by the owner/operator,
5. The type of control device,
6. The manufacturer's name and model number,
7. The dimensions of the control device and capacity,

8. The construction materials, the description of the sampling and monitoring system (location, associated equipment, reading frequency, and analytical procedure), and

9. All performance test results.

Emission reduction based on engineering calculations

1. A list of all references and sources used;

2. The dates of closed-vent monitoring;

3. All design analysis, specifications, drawings, and piping design, (information provided by vendor is okay);

4. A list of adsorber parameters (vent stream composition, constituent concentrations, flow rates, relative humidity, temperature, design outlet capacity level, type and working capacity of activated carbon beds, and the expected service life of the carbon); and

5. The owner/operator signed statements

a. parameters used were based on the maximum process rate, and

b. control device is designed to operate at a 95 percent efficiency rate (unless the organic concentrations is below 10 ppmw or emissions are below 3 pounds per hour and 3.1 tons per year).

(Title 22, CCR, Section 66264.1032(c))

The following general device information must be provided to DTSC and kept on file by the applicant: the description and date of modification of the closed-vent system or control device, a description of the monitoring device, a diagram of the monitoring sensor location, and the date(s) of the device start-up and shutdown. (Title 22, CCR, Section 66264.1035)

Recordkeeping and exceedances must be reported as follows:

1. For carbon adsorption systems that do not regenerate directly the date when the existing carbon in the control device is replaced with fresh carbon.

2. Record the readings from monitoring.

3. Include the reason for the exceedance and what corrective measures were taken.

(Title 22, CCR, Section 66264.1035(c)(4))

Closed-vent systems must meet the no detectable emissions limit (500 ppm above background) and may have no visual emissions. Monitoring is required on the effective date, annually, and at the request of DTSC. Leaks must be repaired as soon as possible but within 15 days after the leak is detected. (Title 22, CCR, Section 66264.1033(k) & (l))

ATTACHMENTS

The following plans or documents should be included in the permit:

1. Detailed plans and reports on the design, installation, operation, and maintenance of the control device(s).

2. Documentation of compliance certifications.

3. Control device monitoring schedule and procedures.

4. Control device inspection schedule and procedures.
5. The applicant's implementation schedule of the requirements.

OMNIBUS PERMITTING AUTHORITY

RCRA Section 3005 states that permits issued must include terms and conditions that are necessary to protect human health and the environment. Therefore, permit writers can require more stringent controls as permit conditions. If necessary for protection of the public health and the environment the permit may require an emission reduction of more than 95 percent, and lower annual and hourly emissions cut-off limits. (Title 22, CCR Section 66270.32(b)(2))

TECHNICAL REFERENCES

U.S. EPA. December 1990. Workshop-Organic Air Emissions from Waste Management Facilities. Speaker Slide Copies and Supporting Information. Vol. I. CERL 90-124a. Office of Air Quality Assessment, Research Triangle Park, North Carolina.

U.S. EPA. December 1990. Workshop-Organic Air Emissions from Waste Management Facilities. Speaker Slide Copies and Supporting Information. Vol. II. CERL 90-124b. Office of Air Quality Assessment, Research Triangle Park, North Carolina.

EXAMPLES OF COMPLETED WORK PRODUCTS

TIMELINE AND PLANNING

Permit Processing Chart:

Workload Standards:

Statutory & Other Deadlines: